Contribution ID: **411** Type: **Talk in a parallel session**

Spontaneous breaking of diffeomorphism invariance in conformally reduced quantum gravity

Thursday, 11 July 2024 15:20 (20 minutes)

We study the spontaneous breaking of diffeomorphism invariance using the proper-time non-perturbative flow equation in quantum gravity. In particular, we analyze the structure of the UV critical manifold of conformally reduced Einstein-Hilbert theory and study the occurrence of a non-trivial minimum for the conformal factor at Planckian energies. We argue that our result can be interpreted as the occurrence of a dynamically generated minimal length in quantum gravity.

Primary author: GIACOMETTI, Gabriele (UniCT)

Co-authors: BONANNO, Alfio Maurizio (INFN, INAF, Unict); Dr ZAPPALÀ, Dario (Istituto Nazionale di Fisica Nucleare- Sez. Catania); Prof. PLUMARI, Salvatore (Dipartimento di Fisica e Astronomia, Università di Catania)

Presenter: GIACOMETTI, Gabriele (UniCT)

Session Classification: Quantum field theory in curved spacetimes and perturbative quantum gravity

Track Classification: Quantum Gravity (QG): Quantum field theory in curved spacetimes and perturbative quantum gravity